

REMARKS/ARGUMENTS

Upon careful and complete consideration of the Office Action dated December 11, 2006, applicants have amended the claims which, when considered in conjunction with the comments herein below, are deemed to place the present application into condition for allowance.

Favorable reconsideration of this application, as amended, is respectfully solicited.

The Office Action began by objecting to claims 5-16 under 37 C.F.R. §1.75(c) as being in improper form as multiple dependent claims cannot depend from any other multiple claims. It is respectfully submitted that the full set of pending claims has been revised to delete all multiple dependencies therefrom. Accordingly, it is respectfully submitted that the amended claims have been placed in proper form and the objection to claims 5-16 is respectfully requested to be withdrawn.

The Office Action then rejected claims 3-4 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the use of the acronym "wt %-DS" without defining it first in the claims was viewed as rendering the claims indefinite. Said acronym has been deleted from the above-submitted amended claims. Claims 3 and 4 were further rejected with respect to the use of the term "less" in said claims. Because said term was not defined in the specification, the Office Action viewed the use thereof as resulting in the lack of a lower limit in the claimed range, thus rendering the claims indefinite. It is noted that original claims 3 and 4 have been canceled. New claims 18 and 19 have specific ranges identified therein based on the disclosure found in the subject specification on page 7. Based on the newly amended claims, it is

believed that this rejection of the claims has become moot and the rejection is respectfully requested to be withdrawn.

The Office Action next rejected claims 1-4 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,572,775 to Heikkila et al. (hereinafter referred to as "Heikkila et al.").

Heikkila et al. was cited for disclosing "a method for fractionating a solution into two or more fractions by a chromatographic simulated moving bed process.... Heikkila et al. discloses Finex CS 13 GC, a polystyrene matrix crosslinked with divinylbenzene (DVB).... Heikkila et al. discloses the use of Finex columns crosslinked with 5.5% DVB to separate sucrose, a disaccharide from trisaccharides and monosaccharides....The trisaccharides and monosaccharides in the feed solution was present as 2.8% and 0.6% weight of dry solid weight respectively.... Heikkila et al. further discloses the use of Purolite PCR 651 with 5.5% DVB for purification of sucrose, without any other saccharides." It was then noted by the Office Action that "the recitation '2 wt% or less of a saccharide monomer and/or saccharide dimer' of the instant application, claim 3, is considered to include compositions with 0% mono- or disaccharides." Based on said reasoning, claims 1-4 were alleged to be anticipated by Heikkila et al. Applicants respectfully disagree.

The present invention, as now claimed in claim 1, is directed to a chromatographic process for separating saccharide monomers from saccharide dimers and/or saccharide trimers from saccharide dimers, in a feed solution having a saccharide dimer content of more than 65 weight % on dry solids basis, wherein an ion exchange resin with a degree of crosslinking of 5 to 8% is used when saccharide monomers are separated from saccharide dimers, and an ion exchange resin with a degree of crosslinking of 2 to 4.5% is used when saccharide trimers are separated from saccharide dimers, the process resulting in a separated saccharide dimer fraction

by removal of at least 75% of the saccharide trimers from the feed solution and/or by removal of at least 65% of the saccharide monomers from the feed solution, and resulting in a yield of saccharide dimer of over 85 weight % on dry solids basis.

Said claim was amended to better define the present invention, based on the disclosure found on page 7 of the subject specification, and to address the earlier rejection of the claims addressed above. Claims 2-4 were canceled, as new claims 17-21 were added. It is respectfully submitted that no new matter has been introduced into the application by way of these amendments.

In rejecting the claims of the present application based on Heikkila et al., the Office Action specifically acknowledged Example 1 of Heikkila et al.. In this Example, the composition of the feed solution contains 57.6% of sucrose (a disaccharide), 2.8% of trisaccharide and 0.6% of monosaccharides. The resin used for separation has a DVB % of 5.5 (corresponding to its degree of crosslinking), which according to the present invention would be suitable for separating monosaccharides from disaccharides. However, Heikkilä et al. does not teach the monosaccharide or trisaccharide contents of the separated disaccharide fraction or its disaccharide content. Only the sucrose purity (90.1%) of the separated disaccharide fraction is mentioned by Heikkila et al. It is stressed that this figure allows this disaccharide fraction to contain all the trisaccharides and monosaccharides (totaling 3.4%) contained in the original feed solution. It is respectfully submitted that the goal of Heikkilä et al. is to separate molasses into three fractions, namely are sucrose, betaine and residual fractions, the latter being largely made up of salts. Heikkilä et al. has no teaching to separate efficiently minor amounts of mono- and tri-saccharides from disaccharides by using a resin having a DVB of 2-4.5% to separate trimers from dimers or having a DVB of 5-8% to separate monomers from dimers to produce a

disaccharide fraction with high yield and high purity. There is no evidence that Heikkilä et al. separated a disaccharide containing feed solution to yield a disaccharide fraction in accordance with the presently claimed invention.

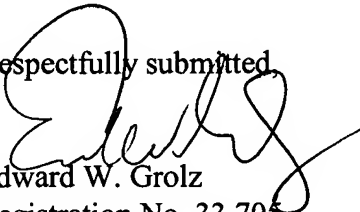
It is respectfully submitted that it is axiomatic that anticipation under Section 102 requires that the prior art reference disclose every element of the claim. In re King, 801 F.2d 1324, 1326, 231 U.S.P.Q. 136, 138 (Fed. Cir. 1986). Thus, there may be no differences between the subject matter of the claim and the disclosure of the prior art reference. Stated in another way, the reference must contain within its four corners adequate directions to practice the invention. The corollary of this rule is equally applicable. The absence from the reference of any claimed element negates anticipation. Kolster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1571, 230 U.S.P.Q. 81, 84 (Fed. Cir. 1986).

As was clearly shown above, Heikkila et al. does not disclose every element of the claim, i.e. Heikkila et al. does not teach (or suggest) the efficient separation of minor amounts of mono- and tri-saccharides from disaccharides by using a resin having a DVB of 2-4.5% to separate trimers from dimers or having a DVB of 5-8% to separate monomers from dimers to produce a disaccharide fraction with high yield and high purity. The absence from Heikkila et al. of teaching separation of a disaccharide containing feed solution to yield a disaccharide fraction in accordance with the presently claimed invention cannot be ignored. Clearly King and Kolster Speedsteel show that Heikkila et al. falls short of the anticipation standard of 35 U.S.C. §102(b).

Based on the amendments made to the claims, and the arguments submitted above, it is respectfully requested that the 102 (b) rejections of claims 1-4 based on Heikkila et al. be withdrawn.

Finally, it is further submitted that all the claims in the application as presently submitted contain patentable subject matter and a Notice of Allowance is earnestly solicited.

Respectfully submitted,



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